

WHAT IS CLAIMED IS:

1. A process of producing a three-dimensionally shaped object comprising a layer forming step of forming a powder material having a refractive index  $n_1$  into a layer having a prescribed thickness on a support, a cross-sectional shape forming step of binding the layer of the powder material formed in the foregoing step into a prescribed cross-sectional shape with a binding agent having a refractive index  $n_2$ ; and repeating these steps successively, wherein  $n_1$  and  $n_2$  satisfy the relationship of  $-0.1 \leq (n_1 - n_2) \leq 0.1$ .
2. A process of producing a three-dimensionally shaped object comprising:
  - (a) a layer forming step of forming a powder material having a refractive index  $n_1$  into a layer having a prescribed thickness;
  - (b) a cross-sectional shape forming step of feeding an ultraviolet (UV) curable binder in a cross-sectional shape into the powder material layer formed in the foregoing step and irradiating UV rays to cure the binder, thereby forming a bound body of the powder material in the cross-sectional shape corresponding to a cut surface of a subject to be shaped cut at a certain one plane with a binding agent having a refractive index  $n_2$  after the curing; and
  - (c) repeating these steps successively, thereby successively laminating and forming the bound body of the

powder material corresponding to a cut surface of the subject to be shaped cut at a plurality of planes, wherein

(d)  $n_1$  and  $n_2$  satisfy the relationship of  $-0.1 \leq (n_1 - n_2) \leq 0.1$ .

3. A process of producing a three-dimensionally shaped object comprising:

(a) a layer forming step of forming a powder material into a layer having a prescribed thickness;

(b) a cross-sectional shape forming step of feeding a UV curable binder in a cross-sectional shape into the powder material layer formed in the foregoing step, thereby forming a bound body of the powder material in the cross-sectional shape corresponding to a cut surface of a subject to be shaped with a binding agent formed by curing the binder upon irradiation with UV rays; and

(c) repeating these steps successively, thereby successively laminating and forming the bound body of the powder material corresponding to a cut surface of the subject to be shaped cut at a plurality of planes, wherein

(d) a volatile component of the UV curable binder after the curing with UV rays is not more than 5 % by weight.

4. The process of producing a three-dimensionally shaped object as claimed in Claim 1, wherein the powder material is a cured material of the UV curable binder to be used for binding.

5. The process of producing a three-dimensionally shaped object as claimed in Claim 1, wherein the powder material is magnesium hydroxide, silica gel, or aluminum hydroxide.

6. The process of producing a three-dimensionally shaped object as claimed in Claim 2, wherein a volatile component of the UV curable binder after the curing with UV rays is not more than 5 % by weight.

7. The process of producing a three-dimensionally shaped object as claimed in Claim 5, wherein the magnesium hydroxide, silica gel or aluminum hydroxide has a mean particle size of from 0.1 to 1,000  $\mu\text{m}$ .

8. The process of producing a three-dimensionally shaped object as claimed in Claim 2, wherein the UV curable binder contains at least one kind of polyfunctional acrylate or methacrylate monomers.

9. The process of producing a three-dimensionally shaped object as claimed in Claim 8, wherein at least one kind of the polyfunctional acrylate or methacrylate monomers accounts for from 20 % by weight to 90 % by weight of the total UV curable binder.

10. The process of producing a three-dimensionally shaped object as claimed in Claim 2, wherein the UV curable binder contains not more than 70 % by weight of an additive for viscosity modification.

11. The process of producing a three-dimensionally shaped

object as claimed in Claim 2, wherein the UV curable binder contains from 0.05 % by weight to 10 % by weight of a photopolymerization initiator having sensitivity to UV rays of from 450 to 250 nm.

12. The process of producing a three-dimensionally shaped object as claimed in Claim 2, wherein the UV curable binder contains one or more colorants of yellow (Y), magenta (M), cyan (C) and white (W).

13. The process of producing a three-dimensionally shaped object as claimed in Claim 12, wherein the colorant contains at least one kind of dyes or pigments.

14. The process of producing a three-dimensionally shaped object as claimed in Claim 2, wherein the UV curable binder has a viscosity of from 1 to 30 mPa·s.

15. The process of producing a three-dimensionally shaped object as claimed in Claim 2, wherein a feed measure of the UV curable binder into the powder material is an inkjet mode.

16. The process of producing a three-dimensionally shaped object as claimed in Claim 1, wherein the powder material is a fine powder having a mean particle size of from 0.1 to 1,000  $\mu\text{m}$ .

17. The process of producing a three-dimensionally shaped object as claimed in Claim 1, wherein the powder material is a fine powder having a mean particle size of from 1 to 50  $\mu\text{m}$ .